

IN THE CLAIMS

Please amend Claims 1 – 41 as follows:

1. (Withdrawn) A starting-process controller for starting a piezomotor (4),
- having a voltage-controlled oscillator (1)(VCO), a power output stage (2), and a resonance converter (3), wherein
 - the oscillator (1)(VCO) generates the control signals required for the power output stage (2),
 - the resonance converter (3) converts the stepped output voltage from the power output stage (2) into a sinusoidal voltage at its output,
 - the piezomotor (4) is driven by the sinusoidal voltage from the resonance converter (3),
 - the motor current that flows when the piezomotor (4) is driven is measured and compared with the phase of the drive voltage in a phase comparator (6),
 - the output signal from the phase comparator (6) is a measure for the phase difference at the time between current and voltage,
 - a phase-locked loop filter (8) smooths the phase-difference signal,
 - the smoothed signal controls the oscillator (1)(VCO), and
 - a start-assisting circuit element (10) fixes the output voltage from the phase-locked loop filter (8) at start-up and thus applies a constant voltage to the input of the voltage-controlled oscillator (1)(VCO).

2 – 4 (Cancelled)

5. (Withdrawn) A starting-process controller as claimed in claim 1, characterized in that the length in time of a signal for activating the switching element (10) is set to a fixed duration from the beginning of start-up.

6. (Withdrawn) A starting-process controller as claimed in claim 1, characterized in that the activating signal causes the motor (4) to break away.

7. (Withdrawn) A starting-process controller as claimed in claim 1, characterized in that the activating signal is triggered by the "power-on".

8. (Withdrawn) A starting-process controller as claimed in claim 1, characterized in that the activating signal is generated by a digital counter or a state machine.

9. (Withdrawn) A starting-process controller as claimed in claim 1, characterized in that the activating signal is generated by a digital processor.

10. (Previously Presented) A starting-process controller for starting a piezomotor, comprising:

- a voltage-controlled oscillator (VCO), a power output stage, a resonance converter, a phase comparator, a phase-locked loop filter and an adjustable time-delay element, wherein
- the VCO generates the control signals required for the power output stage,
- the power output stage provides stepped output voltage,
- the resonance converter converts the stepped output voltage from the power output stage into a motor voltage for driving the piezomotor, the motor voltage being sinusoidal and having an associated motor current when the piezomotor is driven,
- the phase comparator compares the motor current with the phase of the motor voltage, and provides a phase-difference signal representing a measure of the phase difference between motor current and the motor voltage,
- the phase-locked loop filter is configured to smooth the phase-difference signal so as to provide a smoothed signal that controls the VCO, and
- the adjustable time-delay element providing for controlled reduction of the phase difference between the motor voltage and the motor current in a start-up process for starting up the piezomotor from a large starting angle at initiation of the start-up process towards a smaller operating angle at an operating point, the adjustable time-delay element effecting the reduction in the form of one of: (i) a preset linear gradient, the linear gradient having a preset starting delay, a preset final delay and a preset, fixed change in delay per selected time increment over the duration of the start-up process, such that, at initiation of the start-up process, the starting delay applies to generate a start-up phase angle toward enabling reliable start up of the piezomotor and, at the operating point, the final delay applies to generate an operating phase angle toward enabling reliable operation of the piezomotor, or (ii) a preset progressive curve, the progressive curve having a preset starting delay, a preset final delay and a preset, varying change in delay per selected time increment over the duration of the start-up process, such that, at initiation of the start-up process, the starting delay applies to generate a start-up phase angle toward enabling

reliable start up of the piezomotor, and, as the operating point is neared, the change in delay per selected time increment becomes progressively smaller and, at the operating point, the final delay applies to generate an operating phase angle toward enabling reliable operation of the piezomotor, or (iii) a preset combination of a linear gradient and a progressive curve.

11. (Previously Presented) The starting-process controller of claim 10, wherein the reduction in phase angle during the start-up process is in the form of a ramp.

12. (Previously Presented) The starting-process controller of claim 10, wherein the adjustable time-delay element comprises a digital counter, and wherein the digital counter effects the controlled reduction in phase angle between the motor voltage and the motor current in the form of the linear gradient, the progressive curve or the combination of such gradient and curve.

13. (Previously Presented) The starting-process controller of claim 12, wherein, at selected times during the start-up process, the digital counter has respective starting values such that the starting value of the digital counter at a particular selected time fixes the respective delay as to the motor current, the delay generating a phase angle at such selected time.

14. (Previously Presented) The starting-process controller of claim 13, wherein the digital counter counts from each starting value to a preset final count, the final count being associated with the passing on of the motor current subject to the respective delay.

15. (Previously Presented) The starting-process controller of claim 13, further comprising a start-up process delay controller, the start-up process delay controller controlling the adjustable time-delay element by one or both of (i) providing the starting values to the digital counter of the adjustable time-delay element and/or (ii) having a timing interval associated with the selected time increment between changes in delay.

16. (Previously Presented) The starting-process controller of claim 10, further comprising a start-up process delay controller, the start-up process delay controller controlling the adjustable time-delay element by one or both of (i) providing one or more of the starting delay, the final

delay and/or the change in delay and/or (ii) having a timing interval associated with the selected time increment between changes in delay.

17. (Previously Presented) The starting-process controller of claim 16, wherein the start-up process delay controller comprises a reference counter that counts oscillations of a reference frequency, the reference frequency forming a clock signal of the reference counter.

18. (Previously Presented) The starting-process controller of claim 17, wherein the counts made by the reference counter are used directly for setting the delay.

19. (Previously Presented) The starting-process controller of claim 17, wherein the counts made by the reference counter are converted into a value for setting the delay.

20. (Previously Presented) The starting-process controller of claim 17, wherein the counts made by the reference counter are converted into settings for the delay by means of a table of a memory device.

21. (Previously Presented) The starting-process controller of claim 10, wherein the starting process is monitored by a programmable control device.

22. (Previously Presented) The starting-process controller of claim 21, wherein the programmable control device monitors the phase delay digitally.